

S.N.: 09/893,143
Art Unit: 2611

AMENDMENTS TO THE DRAWINGS:

The attached sheets of drawings comprise formal Figures, replacing the original, informal sheets of drawings.

Attachment: 4 Replacement Sheets

REMARKS:

Submitted herewith and attached hereto are four sheets of formal Figures to replace the original, informal sheets of drawings.

Claim 23 is herewith amended to clarify its language and bring it in line to parallel claims 3, 11 and 18. The amendment is deemed not to be made for a reason related to patentability and the full range of equivalents should remain intact.

The Examiner objected to claims 7, 13, 20 and 25 as being dependent upon a rejected base claim. It will be shown below that the independent claims from which these dependent claims depend are all allowable over the references cited by the Examiner. However, the Applicants reserve the right to amend one or more of these dependent claims to be independent claims at a later date.

Please note that all references made herein to the instant application are made with respect to paragraphs of U.S. Patent Application Publication No. 2003/0002563, the publication corresponding to the instant application.

The Examiner objected to the drawings stating: "elements 26A and 26 do not show how it would be obvious to one skilled in the art at the time of invention was made to use element 26A with 26 (i.e. the connects related to each element, I, Q, I_o trigger and 26A to 26)."

The Applicants respectfully draw the Examiner's attention to paragraphs [0020], [0022] and [0026] of the instant application. Therein the operation of the searcher block 26 and the Fast Searcher RAM (FSR) 26A are made apparent. The searcher 26 receives the I and Q signals (which are the same inputs as received by the CDMA core unit 20) as inputs. See para. [0020]. In one exemplary embodiment, i.e., the one shown in FIG. 1, a Fast Searcher RAM (FSR) 26A is associated with the searcher (correlator) 26. See para. [0022]. In this exemplary embodiment, the data (I and Q) is loaded into the FSR in response to a trigger (see [0022], [0026] and FIG. 2A) or simply loaded into the FSR (see [0027] and FIG. 2B). In such a manner, and as is apparent to

one of ordinary skill in the art, the FSR 26A acts as a memory, holding the data (I and Q) for use by the associated searcher 26. As it is the searcher 26 which performs the searching, the searcher 26 receives the Io trigger as an input from the Io detector 24. The connections and operations of these components are further described in para. [0009] and [0010].

All of these connections, and the above explanation, are clear from FIG. 1 and at least the above-cited portions of the application, as read by one of ordinary skill in the art. Should any specific connection or operation remain unclear to the Examiner, the Applicants invite the Examiner to clarify the objection by specifying precisely which connection or operation and which corresponding portion of the application (e.g., paragraph number and sentence) the Examiner considers imprecise or unclear.

The Applicants note that in the Office Action at p. 2, lines 21-22, the Examiner states that: "Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application." However, the Applicants believe that the above-presented arguments sufficiently address the Examiner's objection and that corrected drawing sheets are unnecessary. As such, the Applicants maintain that the above-presented arguments constitute a full response to the objection so as to avoid abandonment of the application. If the Examiner disagrees, the Applicants request that the Examiner clarify the objection to the drawings with additional explanation, references to the Specification and citations to appropriate rules, laws (i.e., statutes) or MPEP guidelines.

The Examiner objected to claim 4 based on an informality. The Applicants traverse this objection noting that the word "buffer" appears only once prior to the contested use and that the previous usage is in the context of "a searcher buffer" with the contested language reciting "said buffer." However, in order to further prosecution, claim 4 has been amended to recite "said searcher buffer." The amendment is deemed not to be made for a reason related to patentability and the full range of equivalents should remain intact.

The Examiner rejected claim 15 under 35 U.S.C. §112, second paragraph, based on the last

limitation of "using a maximum value of I_o to identify one of m segments of *the searcher buffer* on which a searcher is to be enabled for operation." The Examiner rejected claim 15 "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." At p. 4, line 2 of the Office Action, the Examiner further stated: "does applicant mean a searcher buffer, the buffer, the searcher, etc."

The Applicants initially note that this rejection appears to be based on antecedent basis. As such, the Applicants traverse this rejection noting that the word "buffer" appears only once prior to the contested use, in the context of "storing samples of the received CDMA signal into a buffer." The contested language, as identified above, recites "the searcher buffer." There is no other buffer recited in claim 15. Thus, "the searcher buffer" clearly refers to the aforementioned "storing samples of the received CDMA signal into a buffer." However, in order to further prosecution, claim 15 has been amended to recite "~~the searcher~~-buffer." The amendment is deemed not to be made for a reason related to patentability and the full range of equivalents should remain intact.

The Examiner rejected claims 1, 4, 5, 8, 9, 14-16, 19, 21, 24, 26, 29, 30 and 33 under 35 U.S.C. §103(a) as being unpatentable over Yun (U.S. Patent No. 6,463,295) in view of Kang et al. (U.S. Patent Application Publication No. 2002/0181632) in further view of Ohno (U.S. Patent Application Publication No. 2001/0009562). The Examiner rejected claims 2, 3, 6, 10-12, 17, 18, 22, 23, 27, 28, 31 and 32 under 35 U.S.C. §103(a) as being unpatentable over Yun in view of Kang et al. in view of Ohno in further view of Chung et al. (U.S. Patent No. 5,642,377). These rejections are respectfully disagreed with and are traversed below.

Claim 1 of the instant application recites:

A code division, multiple access (CDMA) receiver, comprising:

a RF section for receiving a CDMA signal;

a circuit for determining an instantaneous total received power (I_o) of the received CDMA signal; and

a searcher that is one of enabled for operation or disabled from operation in accordance with the value of I_o .

The Examiner rejected claim 1, first stating:

Regarding claim 1, Yun discloses a code division, multiple access (CDMA) receiver, comprising: an RF section for receiving a CDMA signal (figure 5, col. 1 lines 15 – 41, col. 2 lines 23 – 24); a circuit for determining an instantaneous total received power (I_o) of the received CDMA signal (col. 12 lines 42 – 48, col. 38 lines 1 – 10, 44 – 51, col. 39 lines 50 – 60). Yun does not disclose a searcher that is one of enabled for operation or disabled from operation in accordance with a value.

Although at col. 38, lines 48-49 and col. 39, lines 55-59 Yun discusses instantaneous power, the Applicants submit that Yun is from an unrelated field as compared to the instant application.

Yun is concerned with a method for ongoing power control (see Abstract, col. 1, lines 14-49) and "a method and apparatus for estimating received signal quality (as expressed by [SINR]) for use in the power control method and for other applications" (see col. 5, lines 30-41). In contrast, the instant application uses "instantaneous power measurement information (I_o)... to optimize the searcher data acquisition operation." Para. [0019]. See also para. [0001], [0024] and [0030]. Yun does not even consider or discuss any potential applications for signal acquisition, searching or searchers. Clearly Yun cannot be seen to render obvious aspects of the Applicants' claimed invention since the instant application, and the claims thereof, relate to signal acquisition, searchers and the operation thereof.

Next, the Examiner stated:

In the same field of endeavor, however, Kang discloses a searcher that is one of enabled for operation or disabled from operation (paragraphs 12, 39, 40). Kang also shows an RF section for receiving a CDMA signal (paragraph 4) and a circuit for determining a total received power (I_o) of the received CDMA signal (figure 2 elements 32 – 34, paragraph 10; where instantaneous is not explicitly specified however the total received power (I_o) would be the energy result of $I^2 + Q^2$).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a searcher that is one of enabled for operation or disabled from operation as taught by Kang in the system of Yun to allow the system to perform efficiently and to avoid unnecessary operations (paragraph 13).

The Applicants dispute that Kang et al. is from "the same field of endeavor" as Yun. As noted above, Yun is concerned with ongoing power control. In contrast, Kang et al. is directed to searchers. See para. [0013] of Kang et al. Since Yun does not discuss signal acquisition, searchers or any operations relating thereto, Yun is from a different field of endeavor than Kang et al. Therefore, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to "use a searcher that is one of enabled for operation or disabled from operation as taught by Kang in the system of Yun" as the Examiner contends.

While the searchers according to Kang et al. may be selectively enabled and disabled, the searchers are enabled or disabled in accordance with "a searcher clock signal." See para. [0013], [0024]-[0025] and claim 6 of Kang et al. There is no disclosure or suggestion by Kang et al. of "a searcher that is one of enabled for operation or disabled from operation in accordance with the value of [instantaneous total received power]," as recited in claim 1 of the instant application, for example.

Furthermore, there is no indication by Kang et al. that element 33 of FIG. 2 relates to "instantaneous total received power" (as recited in claim 1 of the instant application), which the Examiner admits.

Thus, Yun in combination with Kang et al. cannot be seen to render obvious claim 1 of the instant application. In the alternative, Yun and Kang et al. are from different fields of endeavor. It would not have been obvious to one of ordinary skill in the art at the time the invention was made to even combine Yun with Kang et al. Furthermore, there is no motivation to combine Yun with Kang et al.

Finally with respect to claim 1, the Examiner stated:

In the same field of endeavor, however, Ohno discloses a searcher that is one of enabled for operation or disabled from operation in accordance with a value (paragraphs 44 – 45, 54, figures 3, 7; where the signal c is being interrupted as a value).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a searcher that is one of enabled for operation or disabled from operation in accordance with a value as taught by Ohno in the system of Yun to reduce power consumption in a searcher (paragraph 15).

In para. [0044], Ohno states:

The path monitor 15 is connected to the searcher 12. The path monitor 15 is supplied with the path information b from the searcher 12. The path monitor 15 monitors the path information b. When the path monitor 15 detects that the path information b does not vary for a predetermined time interval or that the main propagation paths are stable for the predetermined time interval, the path monitor 15 produces **a detection signal or an instruction signal c for instructing alteration of an operating period of the searcher 12.** (emphasis added)

Clearly "c," as utilized by Ohno, is not a value. Rather, "c" is "a detection signal or an instruction signal... for instructing alteration of an operating period of the searcher." As such, Ohno does not disclose or suggest "a searcher that is one of enabled for operation or disabled from operation in accordance with a value" as the Examiner contends. In fact, the searcher of Ohno is intermittently operated: based on "when the main propagation paths are stable for a predetermined time interval" (para. [0017] of Ohno) or "in response to power supply capacity of power supplying means" (para. [0020] of Ohno). See also para. [0018], [0019], [0021], claim 1 and claim 11 of Ohno.

Furthermore, and in light of the operation of the searcher in Ohno, it is clear that Yun and Ohno are not from related fields of endeavor. Although both Yun and Ohno are primarily directed to reducing power consumption (see Yun at col. 1, lines 24-41 for a description of "power control" and see Ohno at [0015] and [0016]), Yun is directed to ongoing power control for communications (see claims 1, 21 and 47 of Yun) while Ohno is directed to reducing power consumption in a searcher (see para. [0015] and [0016] of Ohno). As noted above, Yun does not

discuss signal acquisition, searchers or any operations relating thereto. As such, Yun and Ohno are not from related fields of endeavor. Thus, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to "use a searcher that is one of enabled for operation or disabled from operation in accordance with a value as taught by Ohno in the system of Yun" as the Examiner contends. In addition, there is no motivation to combine Yun with Ohno.

The Applicants admit that equations featuring " $I^2 + Q^2$ " are known in the art. However, it is the determination of "instantaneous total received power (I_o)" and the use thereof for "a searcher that is one of enabled for operation or disabled from operation in accordance with the value of I_o ," as recited in claim 1, for example, that is not disclosed or suggested by the cited prior art.

Based on the above-presented arguments, there is no disclosure or suggestion in any of the cited references, considered individually or collectively, of "a circuit for determining an instantaneous total received power (I_o) of the received CDMA signal; and a searcher that is one of enabled for operation or disabled from operation in accordance with the value of I_o ," as recited in claim 1, for example. In the alternative, there is no motivation to combine the three references as Yun is from a different field of endeavor than Kang et al. or Ohno. Clearly, the combination of Yun with Kang et al. and Ohno cannot be seen to render claim 1 obvious nor is such a combination feasible. The features recited in claim 1 are not disclosed or suggested in the cited art. Independent claim 1 is patentable over the cited art and should be allowed.

Though dependent claims 2–6 and 8 contain their own allowable subject matter, these claims should at least be allowable due to their dependence from allowable claim 1. However, to expedite prosecution at this time, no further comments will be made except as noted below.

Independent claims 9, 15, 16, 21, 26 and 30 each include features similar to those of claim 1, namely: "a method... comprising: ... determining an instantaneous total received power (I_o) of the received CDMA signal; and enabling or disabling a searcher for operation in accordance with the value of I_o " (claim 9); "a method... comprising: ... determining an instantaneous total received

power (I_o) of the received CDMA signal over m consecutive segments of the received CDMA signal; and using a maximum value of I_o to identify one of m segments of the searcher buffer on which a searcher is to be enabled for operation" (unamended claim 15); "a method... comprising: ... receiving a CDMA signal and storing samples of the received CDMA signal into a buffer of a searcher while determining an instantaneous total received power (I_o) of the received CDMA signal; and selectively one of generating or not generating a trigger signal to the searcher in accordance with the value of I_o , wherein when generated the searcher trigger signal causes the searcher to process the stored samples" (claim 16); "a [CDMA] receiver, comprising: ... a signal processor circuit for determining, during a time that the samples are being stored in said memory, an instantaneous total received power (I_o) of the received CDMA signal for selectively one of generating or not generating a searcher trigger signal in accordance with the value of I_o , wherein when generated the searcher trigger signal causes the searcher to process the stored samples" (claim 21); "a [RF] receiver, comprising: ... means for determining an instantaneous total received power (I_o) of the received RF signal; and means for one of enabling a searcher means for operation or disabling the searcher means from operation in accordance with the value of I_o " (claim 26); and "a method... comprising: ... a step for determining an instantaneous total received power (I_o) of the received RF signal; and a step for selectively one of enabling or disabling a searcher for operation in accordance with the value of I_o " (claim 30).

For the reasons stated above with respect to claim 1, Yun in combination with Kang et al. and Ohno cannot be seen to render obvious independent claims 9, 15, 16, 21, 26 and 30. In the alternative, and as also based on the above-presented arguments, Yun is from an unrelated field of endeavor as compared with Kang et al., Ohno and the instant application. As such, there was no motivation for one of ordinary skill in the art at the time the invention was made to combine Yun with Kang et al. and Ohno. Thus, independent claims 9, 15, 16, 21, 26 and 30 are patentable and should be allowed.

With regards to claim 15, the Applicants additionally note that Ohno does not disclose or suggest "using a maximum value of I_o to identify one of m segments of the searcher buffer on which a searcher is to be enabled for operation," as the Examiner alleged on page 8, item no. 19 of the

Office Action. Ohno operates as explained above. The above-presented arguments regarding Ohno and the Examiner's previous application of Ohno are herein repeated and incorporated for this aspect of claim 15.

Though dependent claims 10–12, 14, 17-19, 22-24, 27-29 and 31-33 contain their own allowable subject matter; these claims should at least be allowable due to their dependence from allowable claims 9, 15, 16, 21, 26 and 30. However, to expedite prosecution at this time, no further comments will be made except as noted below.

With regards to claim 4, on. Page 6, item no. 13, the Examiner stated, in part: "Ohno further discloses herein said searcher is responsive to a trigger signal generated by said circuit (paragraphs 44 – 45, 54, figures 3, 7)." Regardless whether or not Ohno discloses what the Examiner alleges, unamended claim 4 actually recites:

wherein said searcher comprises a searcher buffer for storing Inphase and Quadrature (I/Q) samples, and wherein said searcher is responsive to a trigger signal generated by said circuit **for storing I/Q samples into said buffer.**
(emphasis added)

Ohno does not disclose or suggest that the searcher "stor[e] I/Q samples into [a] buffer" in response to a trigger signal. Ohno only discusses turning operation of the searcher on and off. See para. [0054] of Ohno. Clearly Ohno cannot be seen to disclose or suggest at least this aspect of claim 4. Claim 4 is patentable and should be allowed.

With regards to claim 5, the Applicants repeat the above-presented arguments concerning the alleged relevance of Yun to the application. Yun is from a completely unrelated field and, due to its irrelevance, cannot be seen to disclose or suggest aspects of the Applicants' invention, including those aspects recited by claim 5.

With regards to claims 8, 14, 29 and 33, the Examiner alleges that portions of Kang et al. disclose the subject matter recited in claims 8, 14, 29 and 33. Claim 8 recites:

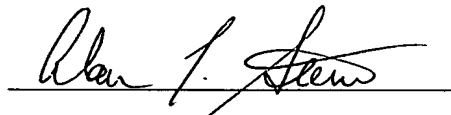
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wherein **the value of I_o is computed** over numbers of samples that are less than the total size of a searcher sample buffer, and is used to select samples from only a portion of the searcher sample buffer for use by the searcher. (emphasis added)

Claims 14, 29 and 33 contain similar language as that of claim 8. There is no disclosure or suggestion by Kang et al. that the energy calculator 160 computes or determines instantaneous total received power (I_o), as recited by claims 8, 14, 29 and 33. As such, Kang et al. cannot be seen to disclose or suggest the subject matter of claims 8, 14, 29 and 33. Claims 8, 14, 29 and 33 are patentable and should be allowed.

The Examiner is respectfully requested to reconsider and remove the rejections of claims 1-6, 8-12, 14-19, 21-24 and 26-33 under 35 U.S.C. §103(a) and to allow all of the pending claims 1-33 as now presented for examination. For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record. Should any unresolved issue remain, the Examiner is invited to call Applicants' agent at the telephone number indicated below.

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